

1 1. A method comprising:
2 forming a data frame comprising a header field, a payload field, and a framewide parity field,
3 wherein said payload field comprises a first parity subfield;
4 populating said framewide parity field with at least one parity bit from a first error-control
5 coding scheme that can detect at least i bit errors in said data frame, wherein i is a positive integer; and
6 populating said first parity subfield with at least one parity bit from a second error-control
7 coding scheme that can correct at least j bit errors in said header field, wherein j is a positive integer.

1 2. The method of claim 1 wherein $j \geq i$.

1 3. The method of claim 1 wherein said at least one parity bit from said second error-control
2 coding scheme can correct at least j bit errors in said payload field.

1 4. The method of claim 1 wherein said second error-control coding scheme is a block error-
2 control coding scheme.

1 5. The method of claim 1 further comprising populating a second parity subfield with at least
2 one parity bit from a third error-control coding scheme that can correct at least k bit errors in said
3 payload field, wherein k is a positive integer.

1 6. The method of claim 5 wherein $k \geq i$.

1 7. The method of claim 5 wherein $j \geq k$.

1 8. The method of claim 5 wherein $j \geq k \geq i$.

1 9. An apparatus comprising:
2 a processor for forming a data frame comprising a header field, a payload field, and a
3 framewide parity field, wherein said payload field comprises a first parity subfield, for populating said
4 framewide parity field with at least one parity bit from a first error-control coding scheme that can
5 detect at least i bit errors in said data frame, wherein i is a positive integer, and for populating said first
6 parity subfield with at least one parity bit from a second error-control coding scheme that can correct
7 at least j bit errors in said header field, wherein j is a positive integer; and
8 a transmitter for transmitting said data frame onto a shared-bandwidth telecommunication
9 network.

1 10. The apparatus of claim 9 wherein $j \geq i$.

1 11. The apparatus of claim 9 wherein said at least one parity bit from a second error-control
2 coding scheme can correct at least j bit errors in said payload field.

1 12. The apparatus of claim 9 wherein said second error-control coding scheme is a block
2 error-control coding scheme.

1 13. The apparatus of claim 9 further comprising populating a second parity subfield with at
2 least one parity bit from a third error-control coding scheme that can correct at least k bit errors in said
3 payload field, wherein k is a positive integer.

1 14. The apparatus of claim 13 wherein $k \geq i$.

1 15. The apparatus of claim 13 wherein $j \geq k$.

1 16. The apparatus of claim 13 wherein $j \geq k \geq i$.

1 17. A method comprising:

2 forming a data frame comprising a header field, a payload field, and a framewide parity field,
3 wherein said payload field comprises: a payload data subfield, a first parity subfield, and a second
4 parity subfield;

5 populating said framewide parity field with at least one parity bit from a first error-control
6 coding scheme that can detect at least i bit errors in said data frame, wherein i is a positive integer;

7 populating said first parity subfield with at least one parity bit from a second error-control
8 coding scheme that can correct at least j bit errors in said data frame, wherein j is a positive integer;
9 and

10 populating said second parity subfield with at least one parity bit from a third error-control
11 coding scheme that can correct at least k bit errors in said payload data subfield, wherein k is a positive
12 integer.

1 18. The method of claim 17 wherein $j \geq i$.

1 19. The method of claim 17 wherein $j \geq k$.

1 20. The method of claim 17 wherein $j \geq k \geq i$.

1 21. The method of claim 17 wherein said second error-control coding scheme is a block error-
2 control coding scheme, and wherein said third error-control coding scheme is a block error-control
3 coding scheme.